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LEVEL news

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Many Uses For Great Lakes-St. Lawrence System

Varied Interests, Differing Expectations

The Great Lakes-St. Lawrence River system directly or indirectly affects the lives of roughly 40 million people who live within its drainage basin.

Not surprisingly, individual interests in the system can vary widely. But, they all have one thing in common: major changes in lake levels and flows can have major impacts on them.

For example, extremely high lake levels can damage shoreline property, flood municipal roads and sewage treatment facilities, and cause hazardous currents in shipping channels.

Extremely low water levels can expose navigation hazards, hinder municipal water intakes and power production, and render docks inaccessible.

Meanwhile, wetlands depend upon alternating periods of high and low water levels to sustain a healthy diversity of plant and animal life.

A recent study identified ten groups that are directly affected by changing levels and flows of the Great Lakes and St. Lawrence River:

1. Agriculture
2. Commercial Fisheries
3. Commercial Navigation
4. Fish, Wildlife and Environment
5. Hydropower
6. Industrial and Commercial Facilities
7. Municipal Infrastructure
8. Native North Americans
9. Recreation and Tourism
10. Residential Shore Property (Riparian)

Adapted from *Levels Reference Study: Great Lakes - St. Lawrence River Basin*, Levels Reference Study Board (March, 1993)

Seaway Facts

Meeting The Needs Of Many Interests

Meeting the needs of various interests is a constant challenge for the board that oversees the regulation of Lake Ontario's outflows.

The International St. Lawrence River Board of Control has the job of maintaining a specified range of water level fluctuation on Lake Ontario, allowing a deep draft waterway for commercial shipping, keeping a dependable flow for hydro-power generation, and safeguarding against extreme highs or lows at Montréal.

The Board also attempts to maintain water levels sufficient for recreational boating from the outlet of Lake Ontario through the St. Lawrence River. Satisfying all of these interests calls for a difficult -- and not always successful -- balancing act.

For example, shoreline residents, industries and municipalities prefer near-average water levels, since high levels can cause flooding and low levels can expose unsightly lake bottom and interfere with water intakes. Shoreline interests immediately upstream of the Saunders-Moses power dam at Cornwall experience an added complication when outflows from Lake Ontario are extremely high. High flows through the dam actually draw down the water level upstream. This means that if high lake levels call for increased flows through the power dam (which is also the principal regulation structure), shoreline interests and recreational boaters upstream of the dam can actually experience low water level problems.

Meanwhile, the commercial shipping industry requires sufficient depths in navigation channels. But, high outflows from Lake Ontario can cause problems for shippers if velocities in the St. Lawrence River's shipping channels become too strong. It is also important that water depths be neither too high nor too low at docking facilities.

In addition to the Saunders-Moses hydro dam, the Beauharnois-Cedars hydropower complex near Montréal uses the flows of the St. Lawrence River for power generation. Hydro plants require dependable flows year round for optimal power production. Extremely high flows may mean that power plants cannot make full use of the water; extremely low flows may mean that plants must operate at less than their optimal capacity.

While attempts to balance the needs of these interests continue, the surrounding environment is also affected by changing water levels and flows. Environment Canada works with the Board of Control and the International Joint Commission on ways to make Lake Ontario's regulation plan more responsive to a wide range of interests.

Lake Level Update

Lakes Superior and Michigan-Huron are forecast to continue their seasonal rises through August. The remainder of the lakes are in their seasonal declines.

At the beginning of August, the levels of Lakes Superior and Ontario were near their long-term averages for the time of year. Meanwhile, Lake Michigan-Huron remained roughly 20 cm above its average, and Lakes St. Clair and Erie were around 30 cm above their averages for early August.

Montréal Harbour's level averaged one metre above chart datum in July and,

although forecast to decline, is expected to remain above datum for the next few months.

As Lake Ontario continues to decline, so will the level in the St. Lawrence River between Lake Ontario and Montréal. However, river levels are expected to remain above chart datum.